# Analysis of the Application of Signal in Motor Vehicle Tax Payment at UPT Samsat Bangkinang

**M. Junaidi[1], Zulher[2], Abshor Marantika[3]**

[123]*STIE Bangkinang, Kampar, Riau, Indonesia*

*Email: 3dy.bkn@gmail.com*

| Keywords: | Abstract |
|---|---|
| *Motor Vehicle Tax, Digital Service Implementation, SIGNAL Application* | *This study analyzes the implementation of the SIGNAL (National Digital Samsat) application for Motor Vehicle Tax (PKB) payments at the UPT Samsat Bangkinang. Using a descriptive qualitative method with SWOT analysis, the research identifies internal and external factors. The results show that the strategic position lies in Quadrant II (WO Strategy), indicating significant opportunities amid internal weaknesses. The main strength is practicality and efficiency, supported by the Indonesian National Police (Korlantas). However, notable weaknesses include limited socialization budgets, lack of trained human resources, and insufficient digital promotion. Opportunities arise from the growing trend of digitalization in public services. The recommended WO strategy focuses on allocating funds for socialization, improving human resource capacity through training, and optimizing social media for public education. These efforts are expected to enhance the effectiveness of SIGNAL implementation and increase taxpayer participation in online services.* |

## INTRODUCTION

The development of digital technology has brought significant changes in various sectors of life, including in the implementation of public services. The Government of Indonesia continues to strive to improve efficiency, transparency, and ease of access to services through the implementation of an integrated digital system. One form of digital transformation is the launch of the SIGNAL Application (National Digital Samsat) developed by the National Police Headquarters Korlantas in collaboration with the Ministry of Home Affairs and Raharja Services. This application aims to facilitate the public to be able to pay Motor Vehicle Tax (PKB) online, without the need to come directly to the Samsat office.

The presence of the SIGNAL Application is expected to be a solution to various manual service problems, such as long queues, limited service time, and the risk of bureaucratic inefficiency. With a digital system, people should be able to save time, costs, and get a faster and more practical service experience. In addition, the implementation of SIGNAL also supports national policies in realizing e-government and digitizing public services, which are one of the strategic priorities of local and central governments.

However, even though nationally the SIGNAL application has been downloaded more than 4.5 million times as of November 2023 (https://bapenda.sumbarprov.go.id), the utilization rate in several areas is still very low, including at UPT Samsat Bangkinang, Kampar Regency, Riau Province. Based on data obtained from UPT Samsat Bangkinang from 2022 to September 2025, the rate of use of the SIGNAL application for PKB payments only reached an average of 0.41%

of the total transactions made. Most people, namely 99.59% of taxpayers, still choose to make payments manually by coming directly to the Samsat office.

Table 1 Comparison of Manual PKB Payment and E-Samsat Transaction data at Samsat Bangkinang in 2022, 2023, 2024, and 2025

| No | Years | Manual Transactions | | E-Samsat Transactions | | Percentage | | Desc |
|---|---|---|---|---|---|---|---|---|
| | | Unit | PKB | Unit | PKB | Unit | PKB | |
| 1 | 2022 | 60,492 | 44,329,904,580 | 199 | 160,151,809 | 0.33% | 0.36% | |
| 2 | 2023 | 65,811 | 55,787,476,707 | 268 | 219,607,630 | 0.41% | 0.39% | |
| 3 | 2024 | 60,787 | 48,099,009,334 | 322 | 274,797,643 | 0.53% | 0.57% | |
| 4 | S.d Sep 2025 | 49,335 | 40,197,352,597 | 184 | 162,141,704 | 0.37% | 0.40% | |
| Average | | 59.106 | 47.103.435.805 | 243 | 204.174.697 | 0.41% | 0.43% | |

Source : Samsat Bangkinang 2025 Data

From the table above, it can be seen that although there is a nominal increase in digital transactions from year to year, the proportion is still very small compared to manual transactions. The average transaction value of SIGNAL only reaches IDR 204 million per year, much smaller than manual payments which reach IDR 47 billion per year. This condition shows that digital transformation in motor vehicle tax services in Bangkinang has not been running optimally.

The low level of SIGNAL utilization at UPT Samsat Bangkinang is caused by several factors, such as low digital literacy of the community, lack of socialization and application promotion, limited human resources (HR), and the unavailability of a special budget for socialization activities. In addition, some people still feel more comfortable paying taxes directly because they are used to it and feel safer if they interact directly with officers.

These findings are different from the results of research in urban areas. Dewi et al. (2024) in Central Jakarta found that the implementation of SIGNAL had a positive effect on taxpayer compliance, with the main success factors being intensive socialization and adequate technology support. Dio Putra Adiansah et al. (2025) in Tanjungpinang also proved that SIGNAL is effective in reducing queues and increasing service efficiency. Meanwhile, Wireziyan Fadhilla et al. (2024) in Padang showed that SIGNAL is effective in urban areas because people are more adaptable to technology. On the other hand, Rahmad Hidayat & Sri Mulyani (2024) found that in rural areas of Riau, the use of SIGNAL is still limited to young and highly educated people.

Thus, there is a research gap between urban and semi-urban areas such as Bangkinang. Some of the gaps identified include:

1. The empirical gap, because previous research focused more on service effectiveness and tax compliance, rather than on the level of application implementation.
2. Theoretical gap, because there have not been many studies that use SWOT analysis to formulate strategies to increase the use of SIGNAL.
3. The contextual gap, because the social characteristics and digital literacy of people in areas such as Bangkinang have not been studied in depth.

**The formulation of the problem** in the research on *the Analysis of the Application of SIGNAL Application in Motor Vehicle Tax Payment at UPT Samsat Bangkinang* is :

1. What internal factors (S&W) are present in the implementation of the SIGNAL application?

2. What external factors (O&T) are present in the implementation of the SIGNAL application?
3. What is the right strategy to improve the adoption of the SIGNAL application?

**The purpose of this study** is to analyze the internal and external factors that affect the implementation of the SIGNAL Application and formulate the right strategy to increase its utilization in UPT Samsat Bangkinang. Specifically, the objectives of this study are:

1. Identify internal strengths and weaknesses in the implementation of the SIGNAL application.
2. Analyze the factors of opportunity and external threats faced by UPT Samsat Bangkinang.
3. Formulate strategies to improve the implementation of SIGNAL based on the results of the SWOT analysis.

The benefits of this research include :

1. Theoretically, it enriches academic studies in the field of strategic management and the application of digital innovation in the public sector.
2. Practically, it provides strategic input for UPT Samsat Bangkinang in increasing the adoption of the SIGNAL application and becomes a consideration for local governments in the formulation of digital-based tax policies.

Thus, this research is expected to make a real contribution in supporting digital transformation in the public service sector, especially in increasing the implementation of the SIGNAL application as the main instrument for modernizing regional tax services in Kampar Regency.

## METHODS

This study uses a qualitative descriptive approach with the aim of providing an in-depth overview of the application of the SIGNAL Application (National Digital Samsat) in the payment of Motor Vehicle Tax (PKB) at UPT Samsat Bangkinang. This approach was chosen because it allows researchers to understand social phenomena based on the direct experiences and views of the informants, through interviews, observations, and documentation studies.

The research was conducted at the Bangkinang Regional Revenue Management Unit (Samsat), Kampar Regency, Riau Province, from July to September 2025. The research stages include preparation, data collection, analysis, and preparation of final reports.

The research population includes all parties involved in the implementation and utilization of the SIGNAL application, both from government and community elements. The purposive sampling technique is used to determine informants who are considered to know and understand the implementation of the SIGNAL application in the field. The informants consisted of the Head of the Bangkinang Samsat UPT, SIGNAL operator officers, representatives of the National Police, representatives of Jasa Raharja, and taxpayers who use the SIGNAL application. The total number of informants is ten people.

## RESULTS AND DISCUSSION

## SWOT Analysis Results

This study uses SWOT analysis to determine the strategic position of UPT Samsat Bangkinang in the implementation of the SIGNAL Application (National Digital Samsat) as a means of online motor vehicle tax payment.

The analysis was carried out through the assessment of 10 respondents consisting of the Head of UPT Samsat Bangkinang, service officers, Polantas elements, Jasaraharja elements and SIGNAL application users. Each respondent scored on internal factors (strengths and weaknesses) and external factors (opportunities and threats) based on their importance to the success of SIGNAL implementation.

Table 2. SWOT Analysis of the Implementation of the SIGNAL Application at UPT Samsat Bangkinang

| No | Internal and External Factors | Bobot | Rating | Total Value (Bobot x Rating) |
|---|---|---|---|---|
| | **A. Strength** | | | |
| 1 | The SIGNAL application is officially provided by the National Police Headquarters Korlantas | 0,36 | 4 | 1,43 |
| 2 | Reducing taxpayer queues at Samsat offices | 0,34 | 4 | 1,29 |
| 3 | Practical and efficient, payments can be made from anywhere | 0,30 | 3 | 1,03 |
| | Total Strength (a) | | | 3,75 |
| | **B. Weakness** | | | |
| 1 | There is no budget available for the socialization of the SIGNAL system | 0,31 | 4 | 1,16 |
| 2 | Limited personnel and human resources | 0,31 | 4 | 1,16 |
| 3 | No pamphlets or socialization content | 0,37 | 4 | 1,64 |
| | Total Weakness (b) | | | 3,96 |
| | **Difference (a – b)** | | | -0,21 |
| | **C. Opportunity** | | | |
| 1 | The trend of digitization of public services is getting stronger | 0,35 | 4 | 1,45 |
| 2 | The addition of P3K employees of the Riau Provincial Government | 0,30 | 4 | 1,06 |
| 3 | Publication content through government social media | 0,34 | 4 | 1,38 |
| | Total Opportunity (c) | | | 3,88 |
| | **D. Threat** | | | |
| 1 | Low digital literacy of the community | 0,37 | 4 | 1,42 |
| 2 | People feel more comfortable paying directly | 0,34 | 4 | 1,20 |
| 3 | Resistance to changes from habits lama | 0,28 | 3 | 0,82 |
| | Total Threat (d) | | | 3,44 |
| | **Difference (c – d)** | | | 0,44 |

Source : Data analysis 2025

**SWOT Quadrant Analysis**

From the results of the calculation,:
- Differences in internal factors (a – b) = 3,75 -3,96  = -0.21 (Sumbu X)
- Differences in external factors (c – d) =  3,88 - 3,44 = 0.44 (Sumbu Y)

These two values show that the position of UPT Samsat Bangkinang is in Quadrant II (WO Strategy) in the SWOT matrix. This means that the agency has great opportunities, but still has some internal weaknesses that need to be improved.

**Table 3. SWOT Quadrant Matrix of SIGNAL Application Implementation**

|  | Strength | Weakness |
|---|---|---|
| Opportunity | Quadrant I (SO Strategy)Use power to take advantage of opportunities. | Quadrant II (WO Strategy)Take advantage of opportunities to improve weaknesses. |
| Threat | Quadrant III (ST Strategy)Use force to dodge threats. | Quadrant IV (WT Strategy)Minimize weaknesses and avoid threats. |

Source : Data analysis 2025

Based on the table above, the position of UPT Samsat Bangkinang is in Quadrant II (WO Strategy).


**Discussion of WO (Weakness-Opportunity) Strategy**

The results of the analysis show that the implementation of the SIGNAL application still faces several internal obstacles, especially in terms of limited socialization and human resources, but there is a great opportunity from the development of digitalization of public services and local government support.

The WO strategy approach focuses on leveraging external opportunities to cover internal weaknesses, with an orientation to improving the effectiveness of technology-based public services.

1. Identify Internal Weaknesses

Some of the main weaknesses faced by UPT Samsat Bangkinang include:
- There is no special budget for SIGNAL socialization.
  This causes the public's understanding of the application to be low.
- The limitations of personnel and human resources in digital services make socialization and user assistance not optimal.
- Lack of information media such as pamphlets, banners, and digital content that explain how to use the application.

2. Identify External Opportunities

Great opportunities that can be taken advantage of by Samsat Bangkinang include:
- Increasing trend of digitization of public services, in line with government policies to strengthen the e-government system.
- The addition of new apparatus personnel (P3K) within the Riau Provincial Government which can be used to strengthen digital services and socialization.
- The availability of official social media platforms that can be an effective means of disseminating information to the wider community.


**WO Strategy Formulation**

Based on the identification of the above factors, several strategies were obtained that could be applied as a solution to strengthen the implementation of SIGNAL at UPT Samsat Bangkinang.

Table 4. WO Strategy Formulation

| No | WO Strategy | Implementation |
|---|---|---|
| WO1 | Optimization of local government digital media for SIGNAL socialization | Using the social media accounts of the Kampar Regency Government, Bapenda, and Police to educate the public on how to use SIGNAL. |
| WO2 | Employee training and internal digital literacy improvement | Providing technical training and digital services to Samsat employees and field officers to be able to help people who have difficulty using the application. |
| WO3 | Collaboration with educational institutions and communities | Collaborating with campuses, schools, and digital communities in Kampar to expand SIGNAL's socialization to young people. |
| WO4 | Utilization of P3K employees and digital volunteers | Assigning P3K personnel and volunteers to assist the administration process and assisting SIGNAL users at the Samsat counter. |
| WO5 | Provision of educational content and interactive promotions | Create infographics, video tutorials, and digital posters on how to use SIGNAL and its benefits for taxpayers. |

Source : Data analysis 2025

**Implications of the WO Strategy**

By implementing the WO strategy, it is hoped that:
- Internal weaknesses such as lack of socialization and limited human resources can be overcome with technology support and collaboration.
- Public awareness of the importance of digitizing vehicle tax payments is increasing.
- Public service efficiency increases because the queue load at the Samsat office can be significantly reduced.

This approach is also in line with the government's vision to realize public services that are transparent, accessible, and based on digital technology.

**CONCLUSION**

Based on the results of the SWOT analysis with the WO strategy approach, it can be concluded that:
- UPT Samsat Bangkinang has a great opportunity in the development of vehicle tax payment services through the SIGNAL application, in line with the increasing policy of digitization of public services.
- However, there are still weaknesses in the form of limited socialization and human resource capacity that need to be strengthened.
- Therefore, the WO strategy is focused on utilizing external opportunities such as digitalization, adding human resources, and inter-agency cooperation to improve internal weaknesses.

With the implementation of this strategy, the implementation of the SIGNAL application is expected to run more effectively, efficiently, and have a positive impact on increasing the compliance of motor vehicle taxpayers in Kampar Regency.

## REFERENCE

Ali, H., & Marantika, A. (2022). *Bisnis Digital: Prospektif & Implikatif.* Jakarta: Penerbit LD Media. ISBN 978-623-98718-0-2 URL : https://books.google.co.id/ books?hl=id&lr=&id=ZC4VEQAAQBAJ&oi=fnd&pg=PA1&dq=hapzi+ali+pelaya nan+digital&ots=cl_9TNWa_1&sig=WZM2HIeN98kfMaDWGei6wF4r2aQ&redir_ esc=y#v=onepage&q=hapzi%20ali%20pelayanan%20digital&f=false

Devaranti, S., Murodi, H. A., & Machrunnisa, M. (2023). *Inovasi Pelayanan Pajak Kendaraan Bermotor Melalui Aplikasi SIGNAL (Samsat Digital Nasional) di UPTD Kantor Samsat Balaraja Kabupaten Tangerang. Jurnal Administrasi Negara*. DOI : https://doi.org/10.33509/jan.v29i2.2637 URL : https://www. researchgate.net/publication/376211045_INOVASI_PELAYANAN_PAJAK_KEN DARAAN_BERMOTOR_MELALUI_APLIKASI_SIGNAL_SAMSAT_DIGITAL _NASIONAL_DI_UPTD_KANTOR_SAMSAT_BALARAJA_KABUPATEN_TA NGERANG .

Dewi, D. A., Pebyanti, A., Putri, N. A., & Rahmi, N. (2024). *Analisis Implementasi Sistem Aplikasi SIGNAL Polri pada Kepatuhan Wajib Pajak Kendaraan Bermotor di Jakarta Pusat.* Jurnal Transparansi, 8(1). DOI: https://doi.org/10.31334/ transparansi.v8i1.4529

Dio Putra Adiansah, Surya Nita, & Muhammad Erza Aminanto. (2025). *The Effectiveness of the National Digital Samsat Application (SIGNAL) on Reducing Queues and Increasing Compliance of Motor Vehicle Taxpayers in Tanjungpinang*, DOI : https://doi.org/10.56910/literacy.v4i2.2227, URL : https://jurnal-stiepari.ac.id/index.php/LITERACY/article,Literacy Journal, STIE Pari Semarang.

Dio Putra Adiansah, Surya Nita, & Muhammad Erza Aminanto. (2025). *The Effectiveness of the National Digital Samsat Application (SIGNAL) on Reducing Queues and Increasing Compliance of Motor Vehicle Taxpayers in Tanjungpinang.* Literacy Journal, 4(2). DOI: https://doi.org/10.56910/ literacy.v4i2.2227

Jatiningrum C., Marantika A., Wulandari, Sari, R.P., (2022) *Pemanfaatan Aplikasi E-Commerce Pada Pemasaran Produk UMKM Kerajinan Batok Kelapa di Kabupaten Pringsewu,* URL : https://jurnal.kdi.or.id/index.php/nr/article/view/471 STMIK Pringsewu

Karinov. (2024). *Analisis SWOT: Pengertian, Contoh, dan Cara Membuatnya*, https://karinov.co.id/

Putri.L.T., Kasmawati. (2022) Analysis Of Visitor Satisfaction Levels On Andalus Attractions Kampar Regency https://ojsicobuss.stiesia.ac.id/index.php/icobuss1st/article/view/268 Prodi Manajemen STIE Bangkinang

Rahmad Hidayat & Sri Mulyani. (2024). *Implementasi Aplikasi SIGNAL dalam Pelayanan Pajak Kendaraan Bermotor di Provinsi Riau.* Jurnal Ilmu Administrasi Negara, Universitas Riau. (Catatan: belum tersedia DOI, dapat diakses melalui repositori Universitas Riau atau Garuda Kemdikbud).

Rahmadoni R., Zulher, Henrizal, (2022) *Effect Of Service Quality And Price On Customer Satisfaction At Pt. Putri Midai In Bangkinang*, DOI : https://doi.org/10.55768/jrmi.v4i3.142 URL : http://jurnal.pascabangkinang.ac.id/index.php/jrmi/article/view/142 Jurnal Riset Manajemen Indonesia, STIE Bangkinang

Suarni N,, Zulher., Sahrono, Silvany, (2021) *Optimalisasi Pemasaran Melalui Website Dan Whatsapp Dalam Upaya Peningkatan Pendapatan Bagi Pelaku Umkm Di Kabupaten Kampar*, DOI : https://doi.org/10.37695/pkmcsr.v4i0.1171 URL : https://prosiding-pkmcsr.org/index.php/pkmcsr/article/view/1171 Prosiding PKM-CSR

Wireziyan Fadhilla, V. F. A., Melani, J. A., Arianti, R., & Helmi, R. F. (2024). *Analisis Efektivitas Penerapan Aplikasi SIGNAL dalam Peningkatan Pembayaran Pajak Kendaraan Motor Berbasis Digital di UPTD Samsat Padang.* Jurnal Ilmu Sosial, Humaniora dan Seni (JISHS), 3(3). DOI: https://doi.org/10.62379/jishs.v3i3.2362

Wireziyan Fadhilla, Vika Fania Ayu Melani, Jihan Anfiska, Ririn Arianti, Rahmadhona Fitri Helmi. (2024). *Analisis Efektivitas Penerapan Aplikasi SIGNAL Dalam Peningkatan Pembayaran Pajak Kendaraan Motor Berbasis Digital di UPTD Samsat Padang*. DOI : https://doi.org/10.62379/jishs.v3i3.2362 URL : https://jurnal.minartis.com/index.php/jishs/article/view/2362, Jurnal Ilmu Sosial, Humaniora dan Seni, Ilmu Administrasi Negara, Fakultas Ilmu Sosial, Universitas Negeri Padang.